

**1,1,1,2-Tetrafluoroethane 1 ppm to 5000 ppm in Air**

(M)SDS Number: NLB 3310

Revision Date: 10/24/2014

Page 1 of 6

1

**PRODUCT AND COMPANY IDENTIFICATION**

**Manufacturer**

NorLab a division of Norco  
898 W. Gowen Rd.  
Boise, ID 83705

**Contact:** Quality Dept.  
**Phone:** 208-336-1643  
**Fax:** 208-433-6160  
**Web:** www.norlabgas.com

**Product Name:** 1,1,1,2-Tetrafluoroethane 1 ppm to 5000 ppm in Air  
**Revision Date:** 10/24/2014  
**Version:** 1  
**(M)SDS Number:** NLB 3310  
**Common Name:** R 134A in Air  
**CAS Number:** Not Available - Gas Mixture  
**EPA Number:** Not Available  
**RCRA Number:** Not Applicable  
**Chemical Family:** Gas Mixture  
**Chemical Formula:** CH<sub>2</sub>FCF<sub>3</sub> in Air  
**Synonyms:** R134A in Air, Nonflurane in Air, Halocarbon R134A in Air  
**Product Use:** Calibration of analytical instrumentation

For Transportation Emergency Contact CHEMTREC: 800-424-9300

2

**HAZARDS IDENTIFICATION**

**Route of Entry:** Inhalation; Eyes; Skin;  
**Target Organs:** Central nervous system;  
**Inhalation:** Non-toxic - product contains sufficient oxygen to support respiration.  
**Skin Contact:** Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering.  
**Eye Contact:** Contact with rapidly expanding gas near the point of release may cause frostbite.  
**Ingestion:** Not anticipated. Product is a gas at normal conditions.

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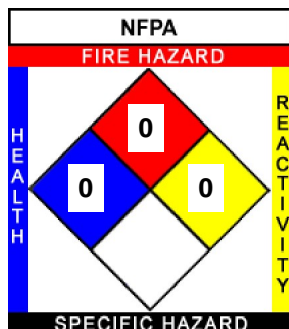
(M)SDS Number: NLB 3310

Revision Date: 10/24/2014

Page 2 of 6

NFPA:  
 HMIS III:

Health = 0, Fire = 0, Reactivity = 0  
 H0/F0/PH3



HMIS III	
HEALTH	0
FLAMMABILITY	0
PHYSICAL HAZARDS	3
PERSONAL PROTECTION	

GHS Signal Word:  
 WARNING

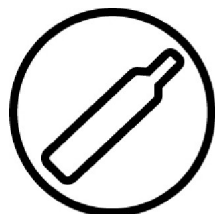
GHS Hazard Pictograms:



GHS Classifications:  
 Physical, Gases Under Pressure, Compressed Gas

GHS Phrases:  
 H280 - Contains gas under pressure; may explode if heated

GHS Precautionary Statements:  
 P403 - Store in a well ventilated place.  
 P410+412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F



**3 COMPOSITION/INFORMATION ON INGREDIENTS**

**Ingredients:**

Cas #	Percentage	Chemical Name
811-97-2	0.0001-0.5%	Ethane, 1,1,1,2-tetrafluoro- R-134A
Not Available	Balance	Air

**1,1,1,2-Tetrafluoroethane 1 ppm to 5000 ppm in Air**

(M)SDS Number: NLB 3310

Revision Date: 10/24/2014

Page 3 of 6

**4 FIRST AID MEASURES**

**Inhalation:** PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PRODUCT. RESCUE PERSONNEL SHOULD BE EQUIPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

**Skin Contact:** None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.

**Eye Contact:** None Required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

**Ingestion:** Not a direct hazard.

**5 FIRE FIGHTING MEASURES**

**Flammability:** Not Flammable  
**Flash Point:** None  
**Flash Point Method:** Not Applicable  
**Burning Rate:** Not Applicable  
**Autoignition Temp:** None  
**LEL:** None  
**UEL:** None

Fire and Explosion Hazards:  
Nonflammable. Cylinders may rupture violently or vent rapidly from pressure when involved in a fire situation.

Extinguishing Media:  
None required. Use as appropriate for surrounding materials

Fire Fighting Instructions:  
Use water spray to cool adjacent cylinders and areas. Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. Continue to cool fire-exposed cylinders until well after flames are extinguished.

**6 ACCIDENTAL RELEASE MEASURES**

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or valve, contact the appropriate emergency telephone number listed in section 1, or call your closest Norco/NorLab location.

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(M)SDS Number: NLB 3310

Revision Date: 10/24/2014

Page 4 of 6

**7 HANDLING AND STORAGE**

**Handling Precautions:**

Use only in well-ventilated areas. Valve protection caps must remain in place unless the cylinder is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to lower pressure (<3000 PSIG) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous backflow into the cylinder.

For additional recommendations, consult Compressed Gas Association Pamphlets P-1.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid from in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

**Storage Requirements:**

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavy traffic areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125 degrees F (52 degrees C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Post "NO SMOKING OR OPEN FLAMES" sign in the storage or use area.

**8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls:**

Local exhaust ventilation as necessary to limit exposure below the acceptable exposure limits.

**Personal Protective Equip:**

Gloves; Safety spectacles with unperforated sideshields; Safety shoes; For emergency release, use a positive pressure NIOSH approved air-supplying respirator system (SCBA or airline/escape bottle) using at a minimum Grade D air.

1,1,1,2-Tetrafluoroethane, R134A  
 OSHA PEL: 1,000 PPM TWA  
 ACGIH PEL: 1,000 PPM TWA  
 LC<sub>50</sub> or LD<sub>50</sub>: 567,000 PPM Inhalation/rat 4 Hr.  
 RTECS #: KI8842500  
 IDLH None

Air  
 OSHA PEL: Not Applicable  
 ACGIH PEL: Not Applicable  
 LC<sub>50</sub> or LD<sub>50</sub>: Not Applicable  
 RTECS #: Not Available  
 IDLH: Not Available

**9 PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:**

Colorless Gas

**Physical State:**

Gas

**Odor Threshold:**

Not Available

**Spec Grav./Density:**

1 (Air = 1)

**Odor:**

Faint ethereal and sweetish odor.

**Molecular Formula:**

CH<sub>2</sub>FCF<sub>3</sub> in Air

**Solubility:**

Slightly Soluble

**Percent Volatile:**

100%

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(M)SDS Number: NLB 3310

Revision Date: 10/24/2014

Page 5 of 6

10

**STABILITY AND REACTIVITY**

**Stability:** Stable  
**Conditions to Avoid:** None known  
**Materials to Avoid:** Incompatible with alkali or alkaline earth metals, powdered aluminum, zinc, etc.  
**Hazardous Decomposition:** At high temperatures 1,1,1,2-Tetrafluoroethane can decompose forming hydrofluoric acid and possibly carbonyl fluoride  
**Hazardous Polymerization:** Will not occur.

11

**TOXICOLOGICAL INFORMATION**

**Inhalation:**

Very high concentrations may cause effects on the cardiovascular system and central nervous system, resulting in cardiac disorders and central nervous system depression.

**Chronic:**

There is currently no known adverse health effects associated with chronic exposure to this gas.

12

**ECOLOGICAL INFORMATION**

Product does not contain Class I or Class II ozone depleting substances. Not toxic. Will not bioconcentrate.

13

**DISPOSAL CONSIDERATIONS**

Dispose of in accordance with local regulations. Do not attempt to dispose of waste or unused quantities in returnable cylinders. Return in the shipping container, properly labeled, with any valve outlet plugs or caps secure and valve protection cap in place to NorLab for proper disposal. Non-refillable containers should be vented in a well-ventilated area then disposed of in compliance with local regulations, or returned to NorLab.

14

**TRANSPORT INFORMATION**

DOT Class: Non-Flammable Gas (2.2) #2.2  
UN #: UN 1956, Class: 2, Proper Shipping Name: Compressed gas, n.o.s.

Proper Shipping Name US:  
UN 1956, Compressed Gas N.O.S., (1,1,1,2-Tetrafluoroethane, Air), 2.2

Proper Shipping Name Canada:  
UN1956, Compressed Gas, N.O.S., 2.2



**1,1,1,2-Tetrafluoroethane 1 ppm to 5000 ppm in Air**

(M)SDS Number: NLB 3310

Revision Date: 10/24/2014

Page 6 of 6

15

**REGULATORY INFORMATION**

**SARA Title III - Supplier Notification:**

This product does not contain chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and for 40 CFR372:

**SARA Title III - Hazard Clases**

Acute Health Hazard

Sudden Release of Pressure Hazard

**California Proposition 65:**

This product does not contain ingredient(s) known to the State of California to cause cancer or reproductive toxicity.

\*Ethane, 1,1,1,2-tetrafluoro- (811972 0.0001-0.5%) TSCA

\*Ethane, 1,1,1,2-tetrafluoro- (811972 0.0001-0.5%) TSCA

**REGULATORY KEY DESCRIPTIONS**

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TSCA = Toxic Substances Control Act

16

**OTHER INFORMATION**

**Disclaimer:**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).